

RESERVE COPY
PATENT SPECIFICATION



375,210

Application Date: Dec. 18, 1931. No. 35,144/31.

Complete Accepted: June 23, 1932.

COMPLETE SPECIFICATION.

**Improvements in or relating to Safety Belts for Men Working on
Scaffolding, Sides of Buildings and like Situations.**

We, CHARLES FENNA, a British Subject, of 107, Central Avenue, Billingham, County of Durham, and ROBERT HENRY DAVIS, a British Subject, of 187, Westminster Bridge Road, London, S.E. 1, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to safety belts for men working on scaffolding, sides of buildings and like situations, and has for its object to provide an improved construction of safety belt wherein inter alia the wearer shall be able to control his descent on the suspension rope of the belt.

According to the present invention, a safety belt comprises in combination a body belt, a suspension rope to be anchored at the top, and a manually releasable clutch attachment adapted automatically so to engage the body belt with the rope as to arrest relative movement of these parts upon the rope taking the weight of the belt and its wearer.

According to a feature of the invention, the said clutch attachment may conveniently comprise a treble-holed clutch block through all three holes of which the suspension rope is threaded, first through one of the end holes, then in the reverse direction through the middle hole, and then in the reverse direction again through the other end hole, and an eye, hook or the like attached to the body belt and having that loop of the suspension rope threaded through it which extends from the first hole of the clutch block to the middle hole thereof, the manual release of the rope from the hold of the block being effected by feeding the tail of the rope upwardly through the last hole of the block.

With this improved construction of safety-belt the suspension rope is tied or otherwise anchored to the scaffolding or the like in the neighbourhood of which the wearer happens to be working and the belt is worn with a short length only of slack rope, that is to say, with a short length only of the suspension rope between

the anchored end of the rope and the clutch block or other form of clutch attachment. If then, the wearer of the belt should slip off the scaffold, his fall will be arrested almost immediately, by reason of the short length of slack rope between the body belt and the anchorage of the suspension rope. Upon the arrest of his fall, the wearer can then gradually lower himself to the ground, for example, by feeding the tail portion of the rope progressively through the clutch-block, that is to say, by gripping the said block in one hand and holding it in an approximately horizontal position and with the other hand pushing said tail-portion of the rope up through the third hole of the block. Then, if necessary, by letting go the block, the latter immediately binds upon the rope and the descent of the wearer is again arrested.

The action of pushing up the tail-portion of the rope through this hole, feeds the close loop of rope which extends along the top of the block between the end hole of the block and the centre hole and thence the second downwardly directed loop extending between said centre hole and the other end hole. This is the loop which is threaded through the hook or eye of the attachment, and, as will be appreciated, the effect of feeding the rope thus through the block is to cause the latter to release partially its friction grip upon the rope, thereby permitting the block, and in consequence, the attachment hook or eye with the belt hanging from it, to slip step by step down the rope, entirely under the control of the wearer of the belt.

Other features of novelty in the improved belt will be referred to in the following description of one embodiment of the invention.

In the accompanying drawing, which illustrates this embodiment of the invention,

Figure 1 is a view of the safety belt in use, the wearer (shown in chain-line) lowering himself down the rope; and

Figure 2 is a view of the clutch block and associated parts, in the rope-gripping position of the block.

55

60

65

70

75

80

85

90

95

100

105

The device comprises a body belt 1 composed of canvas or other suitable flexible material. This belt is worn loose around the chest, being supported from the shoulders by straps 2. As will be appreciated, therefore, the belt is free from the known objections to buckled belts. Moreover, the belt being in the form simply of a looped strap, as shown, with its ends locked by inter-threaded rope loops, there is the complete avoidance of discomfort to the wearer hanging in the belt, due to a tightening of the belt around the chest.

A further feature of a belt of the construction shown is that such a belt is devoid of straps requiring adjustment. The shoulder straps 2 are permanently and non-adjustably attached to the belt, being sewn on, as shown, and the wearer simply slips the belt over his head with the straps disposed one over one shoulder and the other over the other shoulder.

The inter-threaded rope loops referred to comprise a long loop 3, extending from the end of the belt and bound at the extremity upon a thimble 4, and two short loops 5, 6, extending from the other end of the belt and bound each upon a thimble, as shown, the two limbs of the loop 3 being threaded respectively through the two thimbles 7.

The thimble 4 is permanently attached to a spring-closed hook 8, which in turn is removably anchored to the first loop 9 of the suspension rope 10 where the latter passes through the clutch block 11.

The block 11 is of wood or other suitable material and consists simply of an elongated block provided with a handle-portion 12 and having in it in line with one another three holes 13 through which, in turn, as shown, the suspension rope 10 is threaded. The block is reinforced against splitting along the line of the holes by screws 14 staggered with one another on opposite sides of the block.

As shown in Figure 1, the wearer, to lower himself down the suspension rope, grips the block 11 with one hand, holding it in a substantially horizontal position, and with the other hand progressively feeds the tail portion of the rope through the block, pushing it up in steps through the end hole from which it depends.

Figure 2 shows the block in its binding position and clearly illustrates the binding action of the block upon the rope when the block is free to take up this position.

The body-belt may be worn either with its inter-threaded end loops in front of the wearer or behind him.

It is preferable, in order to prevent the clutch block from sliding completely off the rope, should it be too short to reach to the nearest landing below, to provide a

stop on the extremity of the rope (for example, by tying therein a knot 15).

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A safety belt comprising in combination a body belt, a suspension rope to be anchored at the top, and a manually releasable clutch attachment adapted automatically so to engage the body belt with the rope as to arrest relative movement of these parts upon the rope taking the weight of the belt and its wearer.

2. A safety belt as claimed in Claim 1, wherein the clutch attachment comprises a treble-holed clutch block through all three holes of which the suspension rope is threaded, first through one of the end holes, then in the reverse direction through the middle hole, and then in the reverse direction again through the other end hole, and an eye, hook or the like attached to the body belt and having that loop of the suspension rope threaded through it which extends from the first hole of the clutch block to the middle hole thereof, the manual release of the rope from the hold of the block being effected by feeding the tail of the rope upwardly through the last hole of the block.

3. A safety belt as claimed in Claim 1 or Claim 2, wherein the body belt takes the form of a strap with a loop at one end through which the other end of the strap is threaded, said other end being anchored to the hook, eye or the like through which the suspension rope loop is threaded.

4. A safety belt as claimed in any of the preceding Claims, wherein the body belt is provided with shoulder straps whereby it can hang freely from the shoulders of the wearer.

5. A safety belt as claimed in any of the preceding Claims 2 to 5, wherein the clutch block is an elongated block of wood formed at one end with a handle-portion (12) and reinforced against splitting along the line of the rope-holes by screws, screwed into the block from the side thereof, the grain of the wood being parallel to the line of the holes and extending through the block in a direction parallel to the axes of the holes.

6. A safety belt constructed substantially as described herein and as shown in the accompanying drawing.

Dated this 18th day of December, 1931.
G. F. REDFERN & Co,
Chartered Patent Agents,
15, South Street, London, E.C. 2.
Agents for the Applicants.

Fig. 1

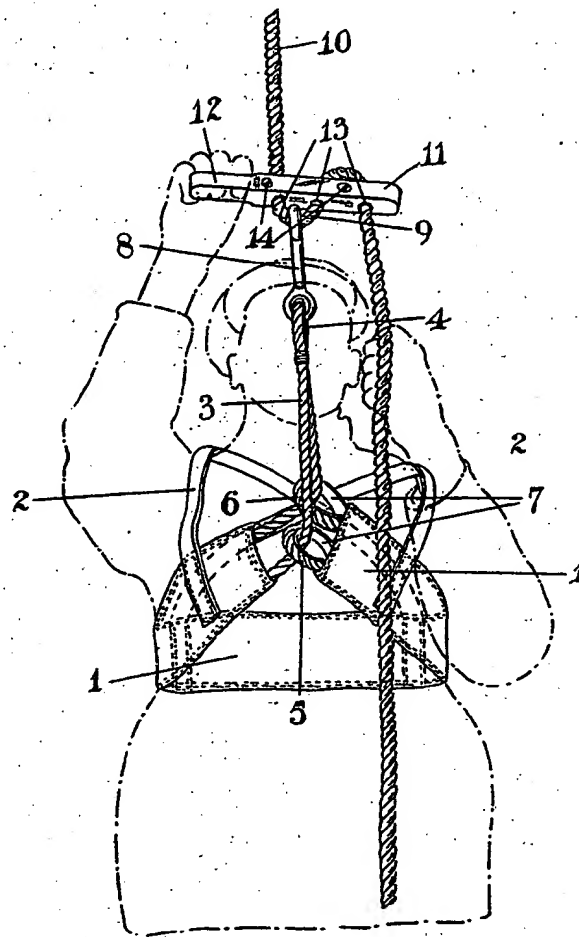


Fig. 2

